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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Nurettin Burcak Beser

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EXAMINER

CHO, HONG SOL

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/032,622	Applicant(s) BESER, NURETTIN BURCAK	
	Examiner HONG CHO	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11,39,41-46 and 48-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11,39,41-46 and 48-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action is in response to the amendment filed on 3/17/2008. Claims 11, 39, 41-46 and 48-57 are pending in the instant application.

Claim Rejections - 35 USC § 112, First paragraph

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
3. Claims 39, 41-46 and 48-57 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Re claim 11, it recites “**determining the mini-slot size** based on a modulation and symbol rate **associated with a respective bandwidth allocation request**.”. The original specification fails to describe the above claim limitation.

Re claims 39 and 46, it recites “grouping cable modems into a plurality of groups of cable modems, where the cable modems are grouped into the plurality of groups based on a latency **associated with each of the plurality of groups**.”. The original specification fails to describe the above claim limitation.

Re claim 53, it recites “grouping cable modems into different groups of cable modems based on latencies **associated with the cable modems** and allocating bandwidth request opportunities to each of the different groups of cable modems based on the different latencies **associated with each of the groups**.”. The original specification fails

Re claim 57, it recites “assigning upstream bandwidth to the cable modems based on the differentiation to allow the slower cable modems are allowed to transmit data on the upstream proportionately more frequently than the faster cable modems.”. The original specification fails to describe the above claim limitation.

Claims 41-45, 48-52 and 54-56 depend from claims 39, 46, 53 are similarly rejected.

Claim Rejections - 35 USC § 103

to describe the above claim limitation.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 39, 42-44, 46, 49-51 and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruszczyk in view of Akgun et al (US 7145887), hereinafter referred to as Akgun.

Re claims 39 and 46, Ruszczyk discloses grouping the cable modems into a plurality of groups by a distance from the CMTS (column 1, lines 26-29) and allocating one or more transmission mini-slots to each of the cable modems (*assigning one of the multiple virtual upstream channels to each of the plurality of groups*, column 7, lines 32-33), but fails to disclose grouping cable modems based on a latency associated with each of the plurality of groups. Akgun discloses identifying the cable modem with delay (column 26, lines 11-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ruszczyk to implement the feature of grouping the cable modems into a plurality of groups based on a latency for the benefit of compensating delay effects on a group of cable modems by utilizing different modulation and symbol rate. Ruszczyk discloses dividing an upstream channel into a stream of mini-slots associated with symbol rate and modulation type (*each of the*

multiple virtual upstream channels is associated with a different modulation and symbol rate, column 7, lines 24-26; column 9, lines 23-26).

Re claims 42, 49 and 55, Ruszczyk discloses transmitting data on mini-slots of an upstream channel (*sending a message on each of the different virtual upstream channels that allocates upstream bandwidth, column 7, lines 29-32).*

Re claims 43 and 50, Ruszczyk discloses cable modems transmitting data on allocated mini-slots by cable modem termination system (CMTS) (*each message pertains to cable modems of a group of the plurality of groups assigned to a respective virtual upstream channel, column 8, lines 5-9).*

Re claims 44 and 51, Ruszczyk discloses transmitting a message with mini-slot size field (*each virtual upstream channel is associated with a different mini-slot size, column 10, lines 30-34).*

Re claim 53, Ruszczyk discloses grouping the cable modems into a plurality of groups (column 1, lines 26-29) and allocating one or more transmission mini-slots to each of the cable modems (*assigning one of the multiple virtual upstream channels to each of the plurality of groups, column 7, lines 32-33).*), but fails to disclose grouping cable modems and allocating bandwidth request opportunities based on a latency associated with each of the plurality of groups. Akgun discloses identifying the cable modem with the group delay (column 26, lines 11-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ruszczyk to implement the feature of grouping the cable modems and allocating bandwidth request opportunities based on a latency for the benefit of compensating

propagation delay effects on a group of cable modems by utilizing different modulation and symbol rate.

Re claim 54, Ruszczyk discloses allocating one or more transmission mini-slots to each of the cable modems (*assigning one of the multiple virtual upstream channels to each of the plurality of groups*, column 7, lines 32-33), where an upstream channel is divided into a stream of mini-slots associated with symbol rate and modulation type (*each of the multiple virtual upstream channels is associated with a different modulation and symbol rate*, column 7, lines 24-26; column 9, lines 23-26).

Claims 41, 48 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruszczyk in view of Akgun and further in view of Chu (US 7046382).

Re claims 41, 48 and 57, Ruszczyk discloses informing cable modems of the allocation of mini-slots for a scheduled upstream usage interval and when to begin the usage interval (column 8, lines 49-56), but fails to disclose differentiating slower cable modems from faster cable modems and assigning bandwidth to the cable modems based on the differentiation such that the slower cable modems are allowed to transmit data more frequently than faster cable modems. Chu discloses identifying modems operating at different speed (column 3, line 62 to column 4, line 11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ruszczyk and Akgun by adding to it the feature of differentiating cable modems by speed and assigning more frequently unused bandwidth of a given upstream

channel to a modem operating at slower data rate such that the bandwidth would not be wasted.

Allowable Subject Matter

6. Claims 45, 52 and 56 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Hong Cho/

Hong Cho
Patent Examiner
4/25/2008